

What is claimed is:

1. A fuel cell comprising:

an electrolyte electrode assembly including a pair of electrodes and an electrolyte interposed between said electrodes, said electrodes including respective gas diffusion layers and respective electrode catalyst layers facing said electrolyte, a surface area of one of said gas diffusion layers being larger than a surface area of the other of said gas diffusion layers, said one gas diffusion layer including an outer marginal region extending outwardly beyond an outer region of said other gas diffusion layer;

first and second metal separators for sandwiching said electrolyte electrode assembly, said first and second metal separators having respective reactant gas flow fields for supplying reactant gases to said electrodes; and

a seal member interposed between said outer marginal region and said first metal separator in contact with said other gas diffusion layer, wherein

said seal member includes a flow field wall inserted between said outer region of said other gas diffusion layer and said first metal separator, said flow field wall partially defining one of said reactant gas flow fields.

2. A fuel cell according to claim 1, wherein

said first metal separator includes a surface in contact with said electrode, and a flat surface spaced from

5 said electrode;

10 said seal member further includes a main seal interposed between said electrolyte and said flat surface; and

15 said flow field wall is interposed between said outer region of said other gas diffusion layer and said flat surface.

20 3. A fuel cell according to claim 1, wherein said reactant gas flow field is a serpentine flow passage having at least one turn region;

25 said seal member further includes a partition seal in contact with said first metal separator and said other gas diffusion layer, said partition seal extending into said turn region of said reactant gas flow field to form said serpentine flow passage, said serpentine flow passage comprising grooves sealed air-tight; and

30 said reactant gas flows through said grooves along both sides of said partition seal in opposite directions.

35 4. A fuel cell according to claim 3, wherein said first metal separator includes a surface in contact with said electrode, and a flat surface spaced from said electrode; and

40 said partition seal is interposed between said electrode and said flat surface.